

## **REMARKS**

Claims 1-11, and 13-15 and 21 remain pending in the present application, claim 12 having been cancelled. Claims 16-20 have been cancelled without prejudice or waiver. New claim 21 has been added by the present amendment.

### **Claims From The Previous Amendment**

The Office Action noted at paragraph 2 that the amended claims 1 and 16 at page 2 in Applicants' previous amendment were not the same as the mark-up version at page 9 of that amendment. The mark-up version of the claims was the correct version, and it is that version of the claim that is amended above. It is Applicants' belief that the Office Action of June 24, 2003, is based upon the correct set of claims (the claims in the mark-up version). As a result, Applicants believe the error in the claims on page 2 was moot. However, if the Office would find it necessary or convenient for Applicants to correct the error in some other way, Applicants stand ready to make such correction upon request.

In the previous Amendment, Applicants had amended claim 1 to add, as an element of that claim, that the loading composition comprised a liquid component. Applicants have now

deleted that claim element. Applicants have added new claim 21 which requires that the loading composition comprises a liquid component. Claims 13 and 14 have been amended to correct their dependencies from cancelled claim 12 to new claim 21.

#### **Rejection of Claims 1-11 and 13-15**

In the July 24, 2003 Office Action, claims 1-4, 6-11, and 13-20 were rejected under 35 U.S.C. §103(a) for obviousness in view of Song et al. U.S. Patent No. 5,935,643 or Breault et al. U.S. Patent No. 5,732,463, in view of Japanese Patent Publication No. 201-38268 or Maricle et al. U.S. Patent No. 4,849,253.

Claim 1 has been amended to state that the loading material is substantially free of electrocatalyst. This is consistent with the result of the claimed method, namely the preparation of a fluid diffusion layer. A fluid diffusion layer need not comprise electrocatlayst; indeed, the present specification defines an electrode as having a fluid diffusion layer as one element and an electrocatalyst as another element. Claim 1 is directed to a continuous method of preparing a fluid diffusion layer rather than a fluid diffusion electrode. In contrast,

claims 16-20 were directed to a continuous method of preparing a fluid diffusion electrode.

The present amendment is supported by the specification.  
For example, the specification states:

Alternatively, the loading material may be totally free of electrocatalyst, such as where an electrocatalyst will be applied to a finished, sintered fluid diffusion layer to make an electrode or applied to the membrane at its interface with a fluid diffusion layer.

(page 14, lines 11-16).

The Office Action acknowledges that Song and Breault fail to teach that the process is continuous. (Office Action, page 2). However, the Office Action states, "It is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation that the above processes would produce the expected results in either a continuous or non-continuous process." (Office Action, page 3). The Applicant respectfully traverses the Office Action's assertion. First, there is no evidence that one of ordinary skill in the art would have considered continuous or non-

continuous processes equivalent or interchangeable. Second, the Office Action is effectively ignoring the term "continuously" in the claims by treating it as though it has no effect on patentability. This is improper. "All the words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970); see also MPEP § 2143.03.

The prior art cited in the Office Action does not disclose or suggest the claimed methods of preparing a fluid diffusion layer. The cited prior art, except perhaps for Campbell et al., is generally directed to methods of manufacturing an electrode where a catalyst layer is coated on a fluid diffusion layer. When the references discuss the fluid diffusion layer used, the references do not disclose that the fluid diffusion layer has been prepared by methods within the pending claims.

In Song et al. U.S. Patent No. 5,935,643, the coating applied to the electrode support is the "electrocatalyst slurry". (See Fig. 1 in Song). For the electrode support, "carbon paper is waterproofed by immersing it in a waterproofing solution mixed with water, drying in the air, and sintering at a high temperature." (Col. 3, lines 10-13). As can be seen, Song

does not disclose or suggest a method of preparing a fluid diffusion layer by continuously applying a loading composition comprising at least one loading material that is substantially free of electrocatalyst.

Breault et al. U.S. Patent No. 5,732,463 discloses a carbon paper substrate as the fluid diffusion layer (Col. 1, lines 24-25). Like Song, Breault does not disclose or suggest a method of preparing a fluid diffusion layer by continuously applying a loading composition comprising at least one loading material that is substantially free of electrocatalyst.

The Office Action cited portions of Maricle et al. U.S. Patent No. 4,849,253 and JP-201-31268 that relate to the application of catalyst layer in making an electrode. These references do not disclose or suggest the claimed methods of preparing a fluid diffusion layer by continuously applying a loading composition comprising at least one loading material that is substantially free of electrocatalyst.

Campbell et al. U.S. Patent No. 5,863,673 discloses preparing a fluid diffusion layer by filling a preformed web with an electrically conductive filler. There is no teaching or

suggestion in Campbell of continuously applying a loading composition to a substrate.

Accordingly, Applicants submit that the rejection of claims 1-11 and 13-15 should be withdrawn.

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In view of the foregoing amendments and remarks, applicants submit that claims 1-11, 13-15 and 21 are allowable. The Examiner is invited to telephone the applicants' undersigned attorney at (312) 775-8202 if any unresolved matters remain.

Please charge any additional fees, and credit any overpayment, incurred in connection with this submission to Deposit Account No. 13-0017.

Respectfully submitted,



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